

Optical and textural properties of AZO:H thin films by RF magnetron sputtering system with various working pressures

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Abstract : AZO:H films were prepared by RF magnetron sputtering system with a AZO (2wt% Al₂O₃) ceramic target at a temperature of 150°C. The annealing treatments were carried out in hydrogen ambient for 1hr at a temperature of 400°C. The AZO:H films were etched with 1% HCl. The influence of the properties of AZO:H films deposited in various working pressures is investigated. As a result, the AZO:H film deposited in 4mTorr showed excellent electrical property of $\rho = 5.036 \times 10^{-4} \Omega \text{cm}$ and strongly oriented (002) peak. The transmittance in the wavelength of 450nm was above 80%. It can be used as front electrode for increasing efficiency of GaN LED.

Key Words : AZO:H thin film, RF magnetron sputtering system

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